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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/750,414

12/31/2003

Michael J. Mills

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EXAMINER

JAMAL, ALEXANDER

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

08/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/750,414	MILLS, MICHAEL	
	Examiner	Art Unit	
	Alexander Jamal	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claim 10** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per **claim 10**, it is not clear whether the claim requires all the types of setting or any one of them. For the purpose of examination, examiner assumes “and/or” reads “or”.

4. Claim 22 recites the limitation "the loop filter" in claim 12. There is insufficient antecedent basis for this limitation in the claim. Examiner assumes the claims reads “a loop filter:”.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. **Claims 1-5,7-16,18,21,25-28** are rejected under 35 U.S.C. 102(e) as being anticipated by Pruecklmayer et al (7092517).

As per **claims 1,12,27** Pruecklmayer discloses a SLIC driver bias control system with a supply level controller (Fig. 3) that supplies a SLIC with differing supply levels used to power SLIC line drivers (abstract). The parameter of a pulse width (by a modulator)) is dynamically controlled based off of the supply control parameter of loop impedance (Col 3 lines 1-10,abstract). The examiner notes that the aforementioned system devices provide the means of claim 27 and perform the method of claim 1.

As per **claims 2,4,13,15**, the operating parameter of the pwm DC-DC converter is based on the operating parameter (loop impedance) of the SLIC. The operating parameter of the SLIC could also be the 'operating state' of the SLIC such as on-hook and off-hook, which are dependant upon the loop impedance.

As per **claims 3,14**, (Col 2 lines 30-40) there is a feedback path measuring loop current, which is an up to date indication of the supply level.

As per **claims 5,16,28**, Col 1 lines 10-15 disclose that the device is a SLIC which performs the standard Borsht function which include onhk/offhk/ringing.

As per **claims 7,18**, the feedback signal will indicate a target supply level to the PWM supply.

As per **claims 8,19**, the control parameters used to create the PWM pulse signal will be varied based on the feedback signal, which is based on the loop current (loop/voltage and impedance). The Loop impedance is based on the operating state of the slic (onhook,offhook) (it provides the target for each operating state).

As per **claims 10,21**, the modulator is dynamically controlled.

As per **claims 11,25,26**, the converter is a DC-DC converter that uses a PWM signal to set the voltage.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 6,19,17,20,22,23,24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pruecklmayer et al (7092517) as applied to claims 1,2,12,13, above, and further in view of Kernahan (6911809).

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As per **claims 6,17**, Pruecklmayer discloses a dynamic supply controller for a SLIC but does not specify controlling the supply controller parameters are based on a range of values.

Kernahan discloses programmable DC converters that can be implemented to be fully programmable and provide specific ramp-ups and ramp downs (Col 11 line 40 to Col 12 line 10). The values are controlled by a microprocessor that is a digital system which inherently required an A/D converter to convert measured signals into digital values. A digital system would control internal parameters based measured and digitized parameters, which are based on a range of measured analog values. It would have been obvious to one of ordinary skill in the art at the time of this application to implement the programmable DC converters into the variable supply system of Pruecklmayer for the added advantage of controlled transitions and dynamic programmability.

As per **claims 9,20**, the target values will be based on digital values, which correspond to analog ranges of values (depending on the resolution of A/D and D/A converters).

As per **claim 22**, Kernahan discloses a programmable loop filter (which inherently compensates) (Col 35 lines 30-40).

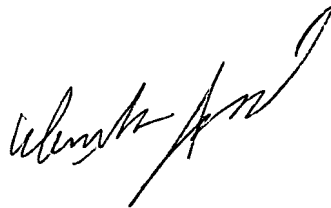
As per **claim 23,24**, in Kernahan, all parameters of the power supply are programmable. This would include the resolution of the inherent A/D converters and the disclosed D/A converters (Col 11 line 40 to Col 12 line 10) in the measuring/controlling functions.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

Examiner Alexander Jamal
August 20, 2007

A handwritten signature in black ink, appearing to read 'Alexander Jamal', is written over the typed name and date.